U.S.Department
of Transportation
**Federal Aviation
Administration**

Office of the Administrator

800 Independence Ave.,S.W.
Washington, D.C. 20591

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Dear Members of the Aviation Community:

We have all struggled with many challenges since September 11, from the loss of life to economic damage to urgently putting in place new procedures and technologies. And while it's true that we need to view our projects and priorities through the prism of September 11, it's also true that we cannot lose our focus. We must stay the course and build an aviation system for the twenty-first century.

Our modernization plans will move ahead full throttle. Traffic will rebound. Demand will come back. Aviation is simply too important – too integral to our economy – to the fabric of our society – to our quality of life. It would be the height of irresponsibility for us to think or plan otherwise. Just as we have moved forward on an integrated strategy for security improvements on multiple levels since September 11, we must continue to move forward on coordinated efforts to modernize the National Airspace System (NAS).

The Operational Evolution Plan (OEP) is our framework for the capacity and efficiency improvements needed for modernization. This executive summary highlights OEP progress since June, including the new Operational Evolution staff and the launch of the OEP web site, http://www.faa.gov/programs/oep. At the terminal level, the Federal Aviation Administration (FAA) will continue to focus on key airports that currently limit the capacity of the NAS. New runways, new routes, new tools and airspace redesign make up the core changes. In the en route domain, the FAA is finishing sector expansion and other airspace changes to relieve choke points, while moving forward on airspace redesign, reduced vertical separation and free flight tools. The FAA strategy for expanding capacity when forecasts call for adverse weather is a combination of improved capabilities at airports, improved management of airspace during severe weather and new tools to improve forecasting.

This updated OEP includes modifications based on new security requirements and temporarily reduced passenger demand. Our best estimate is that economic conditions and passenger demand will recover within 18 to 24 months. As we all agreed earlier this year, the OEP is a "living document" that uses an evolutionary, one-step-at-a-time approach to modernization with collaboration by the entire aviation community. The events of September 11 have impacted some timelines but not our blueprint for change.

Charles Lindbergh saw aviation as part of the continuum of human endeavor. We continue to work together from that shared vision for aviation and its enormous potential for fostering economic growth and enriching our lives both personally and professionally.

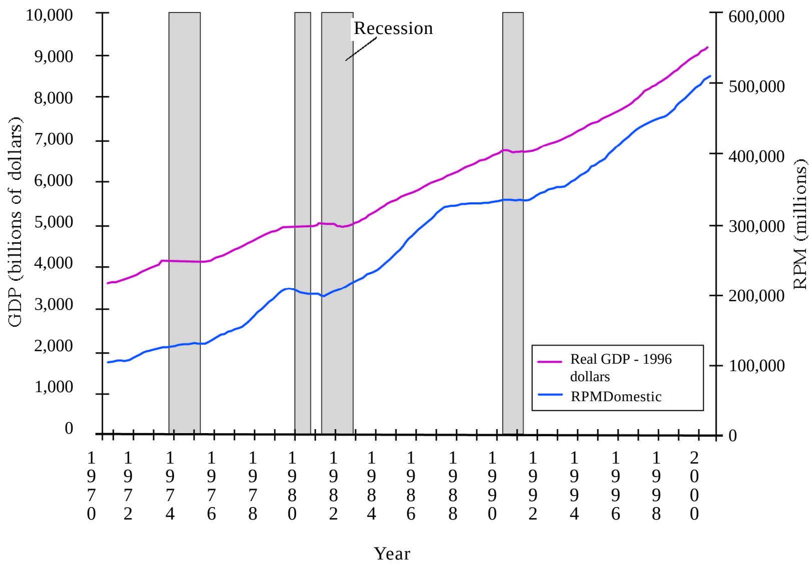
Thank you for your continued support, active participation and dedication to aviation.

Jane F. Garvey
Administrator

INTRODUCTION

America's strategy for meeting overall transportation needs emphasizes safe, secure and coordinated services while anticipating new demands and expectations. Within that strategy, the Federal Aviation Administration's (FAA) vision for aviation transportation builds on a foundation of safety, security and efficiency while modernizing our National Airspace System (NAS).

Gross Domestic Product and Domestic Revenue Passenger Miles
1970-2000



Data from Air Transport Association

Prior to September 11, the NAS would handle 1.9 million passengers, 40 thousand tons of cargo, and 60 thousand non-scheduled flights through the system daily. Demand at the busiest airports and congested airspace led to delays and a lack of efficiency, flexibility, and predictability throughout the NAS, especially during peak flight times and severe weather conditions. These delays disrupted airline operations, passenger plans, and the U.S. economy. To meet those challenges, and the increasing operational complexity of the NAS, the FAA and the entire aviation community worked together to create the Operational Evolution Plan (OEP) released to the public in June 2001.

While some priorities have shifted in light of September 11 and changing economics have forced some delays in equipage and new technologies, traffic and demand are already on the rebound and expected to reach previously projected levels. The OEP assumes we are staying the course to build an aviation system for the 21st century with efficiency and capacity improvements needed to mitigate anticipated congestion.

Near-Term Plans (2002):

- ***Improved precision approaches***
- ***Widespread use of Free Flight tools***

Mid-Term Plans (2003-2004):

- ***Optimize airspace design***
- ***Reduced vertical separation***
- ***Enhanced navigation procedures***

Long-Term Plans (2005-2010):

- ***Data communications***
- ***Satellite navigation***
- ***Enhanced surveillance***

The OEP is organized into four problem clusters, or quadrants:

- Arrival/Departure Rates
- En Route Congestion
- Airport Weather Conditions
- En Route Severe Weather

Each quadrant is composed of solution sets representing commitments of the aviation community to operational changes that enhance efficiency and increase NAS capacity. Solutions sets also include benefits, schedules and key decisions.

More detail is provided at http://www.faa.gov/programs/oep

WHAT'S CHANGED

The operational evolution is proceeding as planned with few exceptions. Significant 2001 improvements implemented as planned include the new Detroit runway, additional choke point sectors, Traffic Management Advisor (TMA) operations, Area Navigation (RNAV) routes at more than 24 airports, summer 2001 collaboration efforts and many more changes. The exceptions were Passive Final Approach Spacing Tool (pFAST) and

Delay has been concentrated at these airports.

Airport	Annual Arrival Delay Rate*		Average Arrival Minutes Late	
	All 2000	Jan-Aug 2001	All 2000	Jan-Aug 2001
Atlanta	27%	24%	15.4	13.5
Boston	33%	28%	19.6	16.6
Newark	29%	25%	18.0	15.9
Kennedy	29%	29%	16.8	17.5
Los Angeles	30%	26%	16.3	13.3
La Guardia	42%	29%	26.4	17.9
O'Hare	33%	26%	20.0	16.5
Philadelphia	30%	26%	16.9	14.9
San Francisco	35%	25%	21.9	15.7

Source: Aviation System Performance Metrics

***Arriving at the gate more than 15 minutes after scheduled arrival time.**

Note: October/November 2001 delay rates and average arrival minutes are down an average of 44 percent and 48 percent, respectively, when compared with October/November 2000.

Gulf of Mexico communications. Operational use of pFAST did not begin as planned, however, implementation of an alternative solution has yielded positive results and a geographic expansion is underway. Completion of Gulf communications buoys will extend into 2002.

Priorities are shifting as the community adjusts to changes in traffic demand and economic conditions. Some airports have accelerated runway improvements (Houston), while others have slipped (Minneapolis). New decisions about the use of tools and technologies were made to improve efficiency more quickly. For example, the FAA decided to complete the deployment of User Request Evaluation Tool (URET) at all 20 en route centers by 2004 and plans for the initial use of 30/30 separation in the Pacific have been accelerated to 2005. Also, the community is committed to trials of data link Build 1 in Miami as scheduled, and a continuation of Build 1 operations to further refine and enhance data link use with more aircraft coming on-line. Build 1A follows in December, 2005.

Overall, greater detail and distinctions in status has been added to the OEP to firm up mid and long term objectives, and to distinguish firm commitments from planning activities. In particular, details were added to the descriptions for research and operational trials for surface movement and situational awareness, the use of cockpit displays and the coming severe weather season. To balance workload, responsibility for the surface movement and situational awareness solutions has been moved to the Terminal Business Unit.

COMMITMENT, COORDINATION, AND ACCOUNTABILITY

The OEP represents the capacity and efficiency cornerstones of modernization. OEP commitments include changes in technology, airspace design, airport infrastructure and new or modified procedures for aircraft crew members, airline operations personnel, FAA controllers, traffic flow management specialists, and maintenance specialists. These commitments and decisions in the OEP emerged from and continue to require the coordination of all members of the aviation community, including the airlines, airports, manufacturers, general aviation, the Department of Defense (DoD), the National Aeronautics and Space Administration (NASA), the FAA and the flying public.

We must focus community investment on shared solutions.

The OEP is outcome driven with clear lines of accountability within and between FAA organizations. The newly established Operational Evolution Staff (OES) reports to the Office of the Deputy Administrator and has responsibility for the coordination and oversight of the OEP. The OEP Team -- composed of senior FAA executives, chaired by the Deputy Administrator, and with participation from the DoD -- meets weekly to resolve policy issues and engage aviation community leaders in key decisions. The DoD participates in the overall process to facilitate meeting national security requirements.

For each Solution Set, an FAA executive has been assigned to coordinate agency and industry efforts with support from cross-agency teams responsible for delivering outcomes and benefits. Performance agreements and incentives link executives, organizations and shared goals. OES members are assigned to problem clusters to ensure consistency across solutions sets. The FAA has aligned activities, budgets and schedules to achieve OEP objectives.

The DoD and the FAA enjoy a long history of federal partnership established by public law. This continuing partnership is reflected in the OEP and associated actions. FAA senior leadership and the DoD Policy Board on Federal Aviation are jointly addressing national security issues ensuring DoD training and operational requirements are met.

NASA's contribution to modernization includes a leadership role in long-term aviation research. Coordinated research on technologies to improve the nation's air transportation system is managed through the joint FAA/NASA Interagency Integrated Product Team.

The RTCA Free Flight Steering Committee has accepted the role of facilitator and coordinator of industry alignment and commitment to the OEP. Community agreement on the plan has clarified responsibilities and helped to advance a climate of accountability. Version 4.0 captures commitments and investments across the aviation community and presents the status of the operational evolution including accomplishments, decisions and discoveries.

This is a living plan, intended to adjust to new priorities and new technologies while fitting with other FAA strategic efforts. For example, the NAS architecture, as the comprehensive plan for infrastructure modernization, includes safety, security and research. The OEP focuses on operational changes that enhance efficiency and increase NAS capacity. The OEP serves as a foundation for planning, research, infrastructure implementation, and community action to meet future growth and the requirements for modernization.

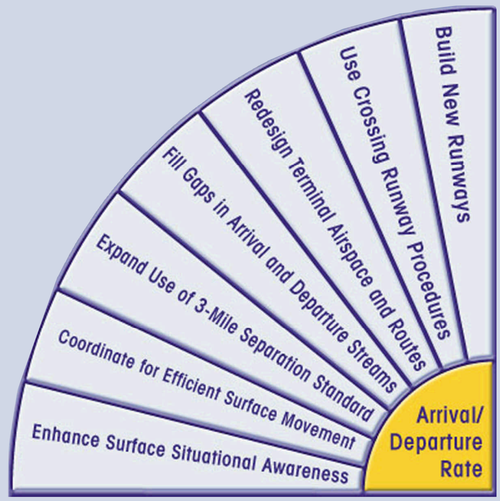
PERFORMANCE AND PROGRESS

The core of this Executive Summary summarizes the strategies for each quadrant of the OEP, then describes the purpose and lists the completed, or about to be completed, major milestones for each solution set. Details can be found at http://www.faa.gov/programs/oep. Future versions of the OEP will include more performance data and more detail on schedules and metrics.

Arrival/Departure Rates

Currently, 15 of the top 31 airports cannot meet peak demand. There are two basic strategies to increase terminal throughput. The first strategy is to increase available capacity by opening new runways and modifying procedures to allow new operations on existing runways. The second strategy is to take better advantage of available runway capacity by improving airspace design, procedures and standards for arrivals and departures, pilot and controller workload, use of terminal separation standards farther from the airport, and information exchange and decision support for surface operations.

These strategies must deal with the multiple phases of flight transitioning to and from airports. Improvements in one area (e.g., a new runway) cannot be fully leveraged or realized without associated enhancements (e.g., airspace reconfiguration). Given projected growth in demand over the next ten years, enhancements in the Arrival/Departure quadrant could contribute nearly two thirds of anticipated OEP-based improvements in throughput.



AD-1 Build New Runways

New runways add more capacity than any other measure in the OEP. The FAA is committed to opening new runways with all procedures, airspace, facilities, equipment and staffing in place to deliver the full capabilities described in the airport master plan and as approved through the environmental review process.

Milestones:

- RTAP, the Runway Template Action Plan, developed to coordinate over 350 activities necessary to commission new runways
- Detroit runway operational December 11, 2001
- Minneapolis moved to 2004 from 2003

Capacity typically grows 20 to 50 percent at airports with new runways.

AD-2 Use Crossing Runway Procedures

Where new runways may not be possible, the OEP will implement new, safe operations that provide increases in airport throughput, such as land and hold short procedures (LAHSO).

Milestones:

- New dependent operations scheduled for 2003; issues remaining include operational acceptance and use of LAHSO procedures

AD-3 Redesign Terminal Airspace and Routes

Enhancements to terminal airspace add efficiency and improve throughput by reducing complexity and de-conflicting interdependent arrival and departure routes. New routing, RNAV procedures and optimized airspace structures give controllers more options for moving traffic and give airspace users more predictable operations.

Milestones:

- Over two dozen RNAV routes in place at BOS, CLT, DFW, EWR, IAD, JFK, LAS, PHL, PHX, and SEA; issues remaining include pilot training
- TAAP (Tactical Altitude Assignment Program) evaluation completed and can be used locally; no national implementation expected based on results
- LAS Four Corner Post Airspace Redesign implemented December 2001
- Yardley-Robbinsville flip-flop, to support New York airspace, implemented December 2001
- Phoenix and San Francisco redesign scheduled for 2002

AD-4 Fill Gaps in Arrival and Departure Streams

Automated tools that improve sequencing and runway balance can increase arrivals and departures by 3-10%.

Milestones:

- TMA in use at seven centers: Denver, Fort Worth, Los Angeles, Minneapolis, Miami, Oakland and Atlanta

Automated tools that improve aircraft sequencing and balance runway use can increase arrivals and departures by as much as ten percent.

AD-5 Expand Use of 3-Mile Separation Standard

Current standards allow for 3-mile separation within 40 miles of a single radar sensor. Where appropriate, reassigning airspace from en route to terminal facilities supports efficiency gains.

Milestones:

- Potomac Consolidation TRACON (PCT): Draft Environmental Impact Statement (DEIS) completed, public meetings scheduled in early 2002, implementation scheduled for 2003
- Santa Barbara terminal expansion scheduled for 2002, contingent on equipment availability

AD-6 Coordinate for Efficient Surface Movement

Delays can be reduced with new tools for airport surface traffic management that include surface surveillance, scheduling or prediction information, and then sharing this information among airports, FAA facilities and airline operational personnel.

Milestones:

- Operational trials scheduled for 2002 and 2003

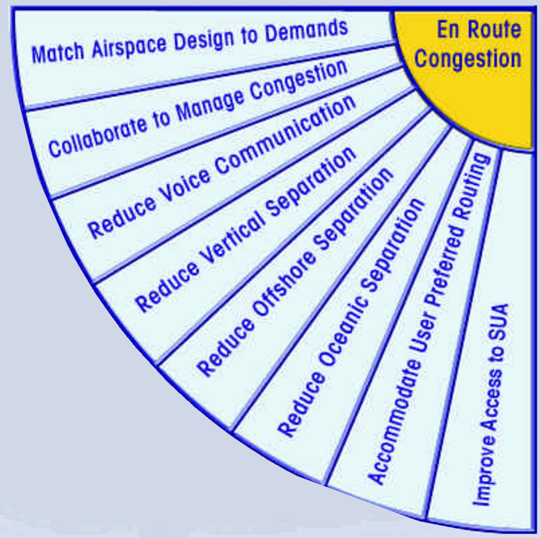
AD-7 Enhance Surface Situational Awareness

Cockpit moving maps showing pilot position and taxi route will increase situational awareness, improving efficiency and reducing runway incursions.

Milestones:

- Limited implementation in 2002 at Memphis and Louisville
- Seven of 65 electronic airport maps published November 2001

En Route Congestion



In the en route arena, capacity is governed by sectors, separation standards and controller workload. The controller uses procedures, routes, equipment and automation tools to assure the safe and efficient flow of aircraft. En route capacity can be balanced to demand in short cycles (e.g. adding controllers to sectors, combining or splitting sectors) and long cycles (e.g. establishing new sectors or routes). When demand exceeds capacity in en route airspace, traffic flow limitations may quickly and significantly ripple into other airspace creating delay for many flights.

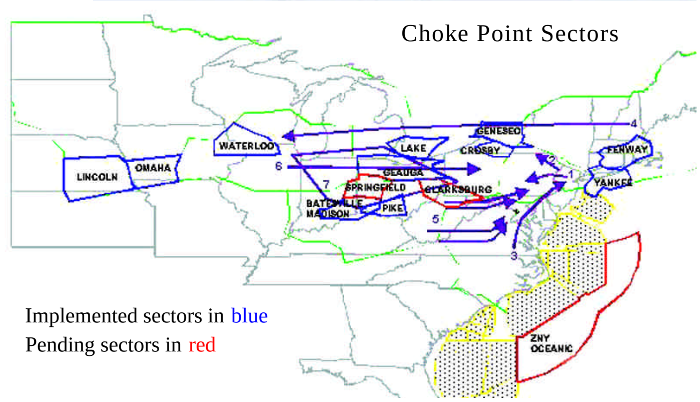
En route congestion and near-gridlock conditions characterize key locations. The core strategy for minimizing en route congestion is increased flexibility to prevent gridlock from forming by increases in physical capacity, decreases in controller workload, and better matching capacity and demand. Physical enhancements include adding sectors at airspace choke points and reducing separation standards -- e.g., Domestic Reduced Vertical Separation Minima (RVSM) at higher altitudes and reduced separation in oceanic and offshore areas. Controller workload improvements include automating routine functions and providing new tools for more flexible responses to user requests -- e.g., less time for communication through data link. Matching demand and capacity is accomplished by restructuring airspace, providing access to special use airspace when not otherwise needed, and better managing flows through and around congested airspaces. A comparison of summer 2000 and summer 2001 data, after removing the effects of differences in weather, showed that 2001 had 10 percent better performance.

ER-1 Match Airspace Design to Demands

Redesigning en route airspace, including adding or adjusting sectors and redesigning routes, reduce restrictions and increase throughput. More use of modern concepts for airspace management increase flexibility and ability to meet growing demands.

Milestones:

- National Route Program (NRP) procedures modified effective June 2001
- Rerouting aircraft through Canadian airspace routinely used during peak traffic



Eleven new sectors added to relieve bottlenecks.

- Eleven choke point sectors implemented as of December 15, 2001
- Limited Dynamic Resectorization (LDR) Casebook completed and distributed
- Initial scope and design for High Altitude Concept completed
- All remaining choke point sectors scheduled for June 2002
- North-South reroutes scheduled for 2002
- Kansas City Center East End Redesign scheduled for 2003

ER-2 Collaborate to Manage Congestion

Sharing information and jointly developing strategic approaches to daily problems can solve congestion problems in ways that satisfy both users and providers.

Milestones:

- Improved tools and web-based information including the Route Management Tool, Coded Departure Routes, CDMnet (Collaborative Decision Making) and other data sets
- Collaboratively developed operational rules and process improvements in 2001
- Collaborative Convective Forecast Product (CCFP) now available at http://fly.faa.gov/Operations/Weather/CCFP/CCFP_Images/ccfp_dmz.html

ER-3 Reduce Voice Communications

Direct controller/pilot data link communications (CPDLC) reduces voice communication workload for controllers and reduces time spent on routine actions.

Milestones:

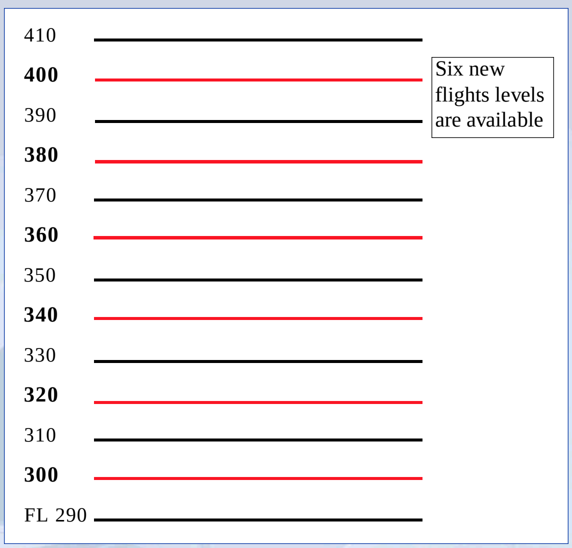
- Preliminary Eurocontrol Test of Air/Ground Data Link (PETAL) 2 Trials completed summer 2001, including first successful Aeronautical Telecommunications Network (ATN) CPDLC revenue flight in Europe
- CPDLC Build 1 is scheduled for June 2002

ER-4 Reduce Vertical Separation

Reducing the current 2000-foot separation to 1000 feet at selected flight levels will reduce congestion between flows by providing new capacity. RVSM makes six additional flight levels available, improving aircraft operating efficiency, controller flexibility and sector capacity.

Milestones:

- Memorandum of Understanding (MOU) addressing DoD RVSM operations finalized October 2001
- Human-in-the-Loop simulations completed November 2001, report expected January 2002



RVSM makes six additional flight levels available that controllers and pilots can use to increase efficiency.

- Industry coordination of Domestic Reduced Vertical Separation Minima (DRVSM) implementation plan scheduled for January 2002
- Notice of Proposed Rule Making (NPRM) to be published April 2002

ER-5 Reduce Offshore Separation

Reduced procedural separation through improved communications and the use of RNAV routes in the Gulf of Mexico provides new capacity.

Milestones:

- RNAV routes to replace J58/86 defined and charted September 2001
- Decision made that high altitude surveillance not feasible at this time
- Complete deployment of production communication buoys moved from 2001 to 2002

ER-6 Reduce Oceanic Separation

Reduced separation (30 miles lateral and 30 miles longitudinal) in the ocean provides new capacity for more efficient flight and reduced delays.

Milestones:

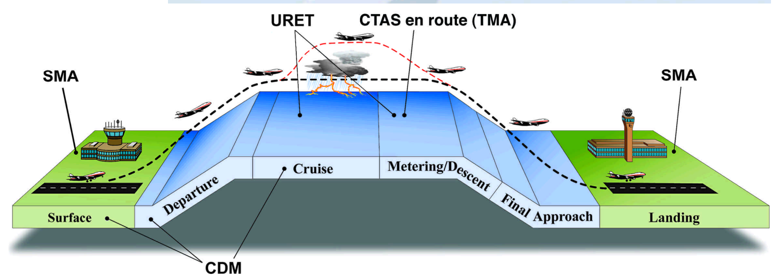
- Advanced Techology and Oceanic Procedures (ATOP) in Oakland scheduled for April 2003
- International Civil Aviation Organization (ICAO) regional procedures and guidance scheduled for 2003

ER-7 Accommodate User Preferred Routing

Adding Free Flight tools such as URET and TMA provide decision support to controllers for approving route change requests and removing airspace restrictions.

Milestones:

- Restrictions were removed at Indianapolis in 2001 based on use of URET
- URET deployed at Kansas City December 2001
- Complete deployment of URET at initial 7 sites by 2002 and accelerate deployment for all remaining Continental United States (CONUS) Air Route Traffic Control Centers (ARTCC)



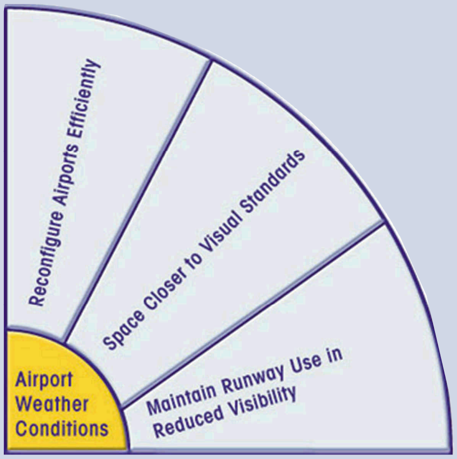
Free Flight tools allow controllers to approve user routing requests and remove restrictions.

ER-8 Improve Access to Special Use Airspace (SUA)

More timely release of military special use airspace (SUA) for civil use, when no longer needed by the military, as well as better information sharing, bring efficiencies by providing more efficient and flexible routing and access for civil aviation.

Milestones:

- Palatka Restricted Area-2906 was scheduled for GA access 24 hours per week in early 2001; based on initial success, weekend access expanded an additional 50 percent



Airport Weather Conditions

For the benchmark airports, typical bad weather operations lower arrival and departure rates 18 percent compared to good weather. For most benchmark airports, the difference between the best and worst delays of the year only require eight hours at the reduced operations levels.

Weather-related reductions in throughput for airports are primarily due to wind or visibility problems that limit the use of runways or require increased spacing between arriving or departing flights. As weather degrades, the spacing applied between aircraft grows, lowering the arrival and departure rates. Large losses in throughput also occur when bad weather requires changes in runway configuration -- time is lost due to the change in configuration and the alternative configuration typically offers a lower throughput. Fallback options may be ineffective because of closely spaced runways or inadequate instrument approaches.

The OEP strategy for addressing weather-related reductions in throughput is to make airport operations less sensitive to weather. This requires more options for runway configurations, improved timing of operation changes to reduce down time, and more consistent spacing of operations as weather degrades. The near-term focus is reducing the impact of changes in runway configurations. Surveillance improvements and procedures to better coordinate operation changes will allow airports to keep closely spaced parallel runways active under a greater variety of weather conditions. In the mid-term, the focus is extending the conditions under which an airport can continue visual operations through cockpit tools and enhanced navigation. In the long-term, improved surface coordination will handle the higher volume. Some airports will add more runways and more instrumented runways to improve the alternative configuration options.

The goal for these changes is to improve performance by as much as 25 percent over today's numbers.

AW-1 Maintain Runway Use in Reduced Visibility

The community goal is to maintain the use of closely spaced parallel runways to provide 4 to 5 additional operations per hour. The near term milestone that supports this goal is Precision Runway Monitor (PRM) operational at five sites by 2002.

Milestones:

- Philadelphia PRM commissioned September 2001; initial operations pending pilot training
- Saint Louis PRM commissioned with limited use
- Minneapolis PRM commissioned; PRM approaches run about twice a day with a goal of 7–10 sessions per day
- National Simultaneous Offset Instrument Approaches (SOIA) standards expected shortly

- San Francisco and New York John F. Kennedy International Airport (JFK) commissioning of PRM expected July 2002
- Wide Area Augmentation System (WAAS) upgrade path decision in 2002

AW-2 Space Closer to Visual Standards

The community goal is operating as close to visual capacity for as long as possible as bad weather begins to limit operations. Improved cockpit displays that identify traffic so pilots have better situational awareness will help continue visual operations.

Milestones:

- United Parcel Service (UPS) using certified Enhanced Visual Approach in visual conditions for data collection and in-service evaluation
- Studies and simulations for Cockpit Display of Traffic Information (CDTI)-enabled flight rules to determine a viable concept of operations, scheduled for 2002

AW-3 Reconfigure Airports Efficiently

Well-orchestrated changes in airport operations can save as much as 10 minutes of down time thus improving arrival and departure rates. The Integrated Terminal Weather System (ITWS) provides predictive capabilities for improved coordination. The community goal is to have ITWS deployed at 34 sites with procedures for sharing information on configuration changes.

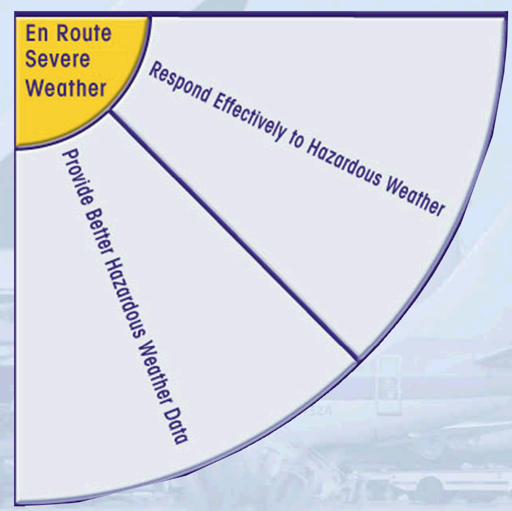
Milestones:

- Operational testing at Houston, Kansas City and New York completed 2001

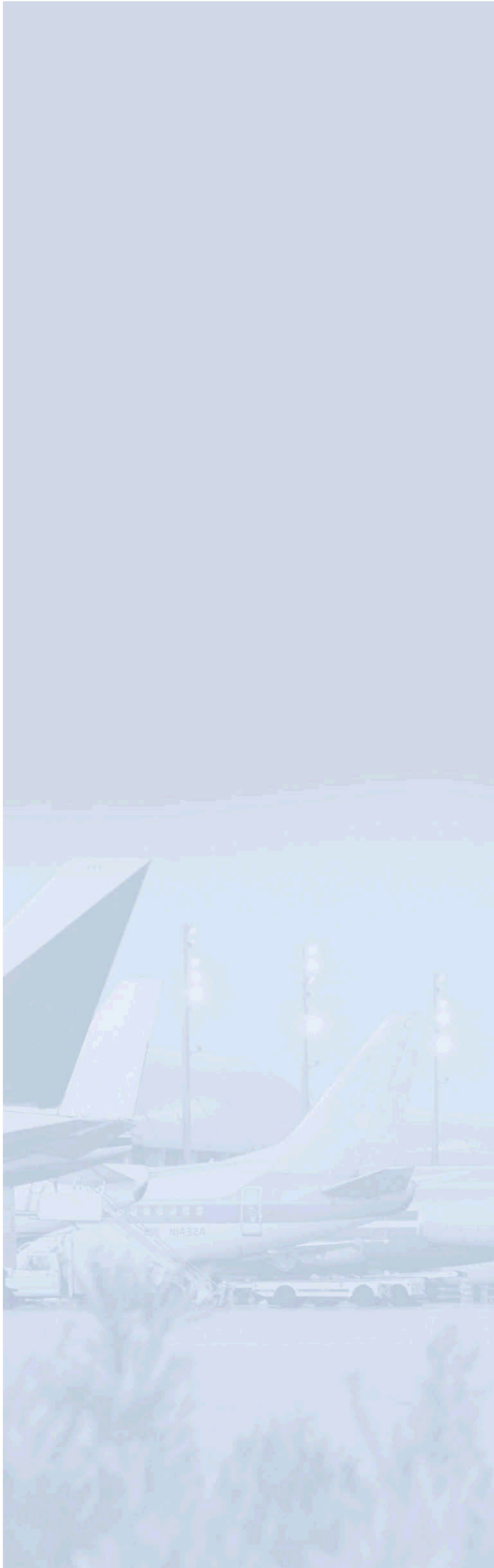
Well planned changes for weather may lead to a 10 percent drop in weather delay.

En Route Severe Weather

Severe weather in en route airspace can block access to key sectors and shift traffic flows to create new congestion points. Imprecise predictions can result in excessive reactions and restrictions. Almost half of the delays and cancellations experienced in the NAS arise from disruptions directly related to the weather, reaction to that weather or the congestion it creates.



En route weather phenomena create a high degree of uncertainty. Difficulty in identifying airspace and aircraft that will be impacted by weather or the resulting congestion is magnified by the uncertainty in the location, movement, and severity of the weather conditions. Extra capacity must be set aside for contingencies and potential congestion arising from shifts in typical flows; without specific location and time data, these measures may be excessive. Adding to uncertainty is the need of individual airspace users to retain flexibility for managing their own contingencies. Without data sharing, these individual actions further degrade the understanding of how forecasted and actual storms affect traffic flows.



The OEP strategy for addressing weather-related congestion is to reduce the uncertainty, and tailor reactions to a finer-grain response, requiring real-time data sharing of forecasts, expected reactions, traffic flow shifts, and operational decision-making. Finer responses to weather-induced congestion mean more options with a range of impacts and more flexible geographic coverage.

Studies show that up to 40 percent of delays due to forecast weather are recoverable. The goal of these solution sets is to reduce delays about 8 percent from year 2000 levels during the severe weather season.

EW-1 Provide Better Hazardous Weather Data

Community goals include improving the quality and broadening the distribution of collaborative convective forecast products and identifying specific flights affected by severe weather.

Milestones:

- ETMS Flow Constrained Area tool deployed
- Information on Runway Visual Range (RVR) at 42 airports via the CDMnet [www.metsci.com/cdm]
- CCFP upgrades implemented in Spring 2002
- Evaluation of corridor integrated weather system planned for Summer 2002

EW-2 Reconfigure Airports Efficiently

Several operational rules and process changes were planned for the 2001 severe weather season. A comparison of days from June through August 2001 against the same period in 2000 showed 150 to 300 fewer delays per day in 2001 for days with similar weather advisories.

Milestones:

- Coded arrival and departure routes incorporated in refined playbook to reduce impact of severe weather on flights not directly affected by storm activity.
- Specific plans for 2002 severe weather season collaboration in handbook February 2002

Industry, FAA, and Airport Alignment

Across the aviation community the transition from OEP discussion to consensus and action has begun. As noted earlier and in the following table, real improvements in NAS performance are emerging from these concerted efforts.

Industry, FAA, and Airport Alignment

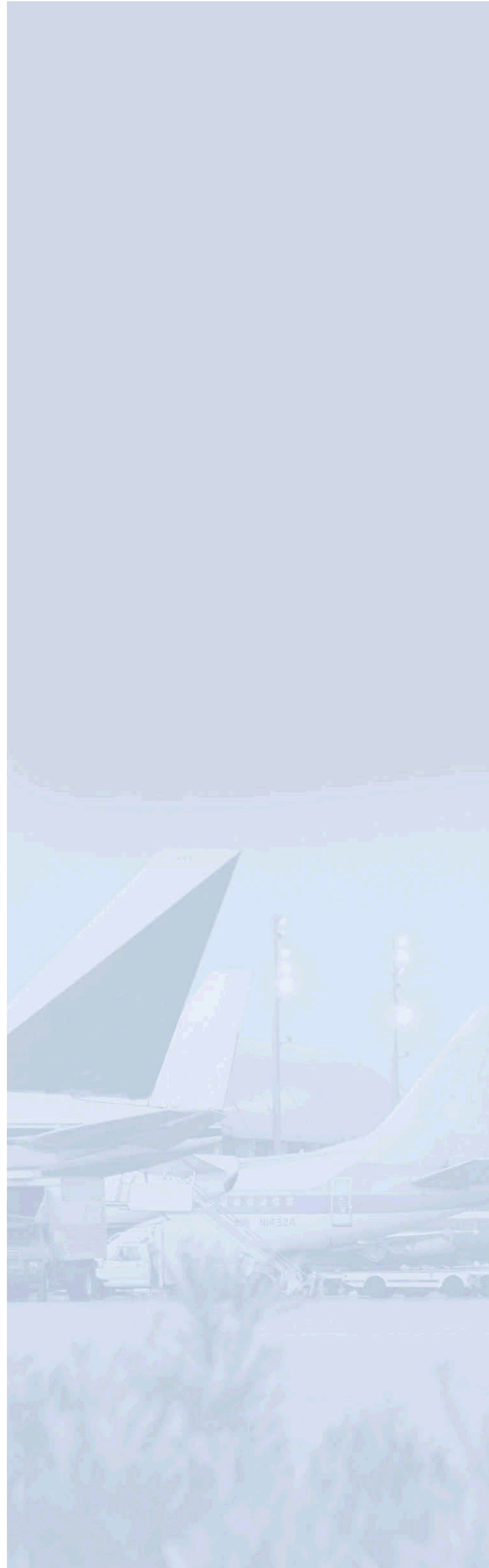
	Industry	FAA	Airports
Completed (2001)	• Improved quality of data and participation in Spring 2001 collaboration • Participated in Spring 2001 training • Improved information dissemination to passengers • Improved and shared demand forecast • Reevaluated scheduling practices at congested airports	• Parallel runway monitors installed; limited use at St. Louis and Minneapolis/St. Paul • Runway incursion training conducted and awareness of controllers increased • Improved dissemination of routing and weather information to facilities via CCFP • Developed and conducted Spring 2001 training • Completed 15 choke point action items by adding 11 new sectors and moving flows • Improved currency and accuracy of SUA status information and expanded internet access, increased user access to MOAs (working with DoD) • Improved delay information dissemination to passengers • Started FFP2 program	• New runways operational at Detroit and Phoenix • Additional precision approaches implemented at 14 airports • Worked with communities to implement capacity plans • Improved information dissemination to passengers
Near-Term (2002)	• Reach agreement with pilots on LAHSO Procedures and assumptions • Training on Closely Spaced Approach procedures *(2001)* • Improve quality of data and participation in Spring 2002 collaboration • Participate in Spring 2002 training • Accelerate equipage to take advantage of RNAV routes and approaches	• Expand use of 3-mile separation standard where applicable • Develop and conduct Spring 2002 training • Complete remaining airspace choke point action items including eight additional sectors • Streamline EIS processes *(2001)* • Expand implementation of area navigation procedures (RNAV) • Complete FFP1 program	• Streamline Environmental Impact Statement (EIS) processes *(2001)*
Mid-Term (2003-2004)	• Accelerate equipage to take advantage of RNAV routes and approaches • Reevaluate scheduling practices at congested airports	• Expand implementation of area navigation procedures (RNAV) • Provide staffing and equipment for new runways • Expand airspace redesign, start to implement RVSM • Complete WAAS (LNAV/VNAV) • Implement LAAS approaches • Initial high altitude implementation • URET operational nationally	• New runways or extensions at Houston, Minneapolis, Miami, Orlando, Charlotte, Denver • Improve surface management process and coordination • Start LAAS implementations • Add signs and lighting at smaller airports to take advantage of new navigation systems
Long-Term (2005-2010)	• Ensure uniform datalink equipage • Equip for enhanced situational awareness on airport surface • Equip and train for new LAAS systems	• Implement New York/New Jersey/ Philadelphia Metropolitan airspace redesign • Continue TRACON consolidation • Implement RVSM • Expand use of datalink for ATC • Initial oceanic 30/30 operations	• New runways and taxiways at Atlanta, Cincinnati, St. Louis, Seattle, Dulles • Enhance surface congestion management • Continue to add capacity through taxiway and runway enhancements

Acronyms

ARTCC	Air Route Traffic Control Center
ATC	Air Traffic Control
ATN	Aeronautical Telecommunications Network
ATOP	Advanced Technology and Oceanic Procedures
BOS	Boston Logan International Airport
CAT I	Category One Landing
CAT II/III	Category Two/Three Landing
CCFP	Collaborative Convective Forecast Product
CDM	Collaborative Decision Making
CDTI	Cockpit Display of Traffic Information
CEFR	CDTI Enhanced Flight Rules
CIWS	Corridor Integrated Weather System
CLT	Charlotte/Douglas International Airport
CONUS	Continental United States
CPDLC	Controller Pilot Data Link Communications
CRCT	Collaborative Routing Coordination Tools
D2	Direct-to
DEIS	Draft Environmental Impact Statement
DFW	Dallas/Fort Worth International Airport
DOD	Department of Defense
DRVSM	Domestic Reduced Vertical Separation Minima
DSP	Departure Spacing Program
DSR	Display System Replacement
EDA	En Route Discent Advisor
EIS	Environmental Impact Statement
ETMS	Enhanced Traffic Management System
EWR	Newark International Airport
FAA	Federal Aviation Administration
FCA	Flow Constrained Area
FFP1	Free Flight Phase 1
FFP2	Free Flight Phase 2
GA	General Aviation
GDP	Gross Domestic Product

Acronyms (Continued)

IAD	Washington Dulles International Airport
ICAO	International Civil Aviation Organization
ITWS	Integrated Terminal Weather System
JFK	New York John F. Kennedy International Airport
LA	Los Angeles
LAADR	Low Altitude Alternative Departure Route
LAAS	Local Area Augmentation System
LAHSO	Land and Hold Short Operations
LAS	Las Vegas McCarran International Airport
LDR	Limited Dynamic Resectorization
LNAV	Lateral Navigation
MAMS	Military Airspace Management System
MEM	Memphis International Airport
MIA	Miami International Airport
MIT	Miles-in-Trail
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MSP	Minneapolis-St. Paul Airport
NAS	National Airspace System
NASA	National Aeronautics and Space Administration
NPRM	Notice of Proposed Rule Making
NRP	National Route Program
NY/NJ/PHL	New York/New Jersey/Philadelphia
OEP	Operational Evolution Plan
OES	Operational Evolution Staff
ORD	Chicago O'Hare International Airport
PARR	Problem Analysis, Resolution, and Ranking
PBO	Performance Based Organization
PCT	Potomac Consolidation TRACON
PETAL	Preliminary Eurocontrol Test of Air/Ground Data Link
pFAST	Passive Final Approach Spacing Tool
PHL	Philadelphia International Airport
PHX	Phoenix International Airport
PRM	Precision Runway Monitor

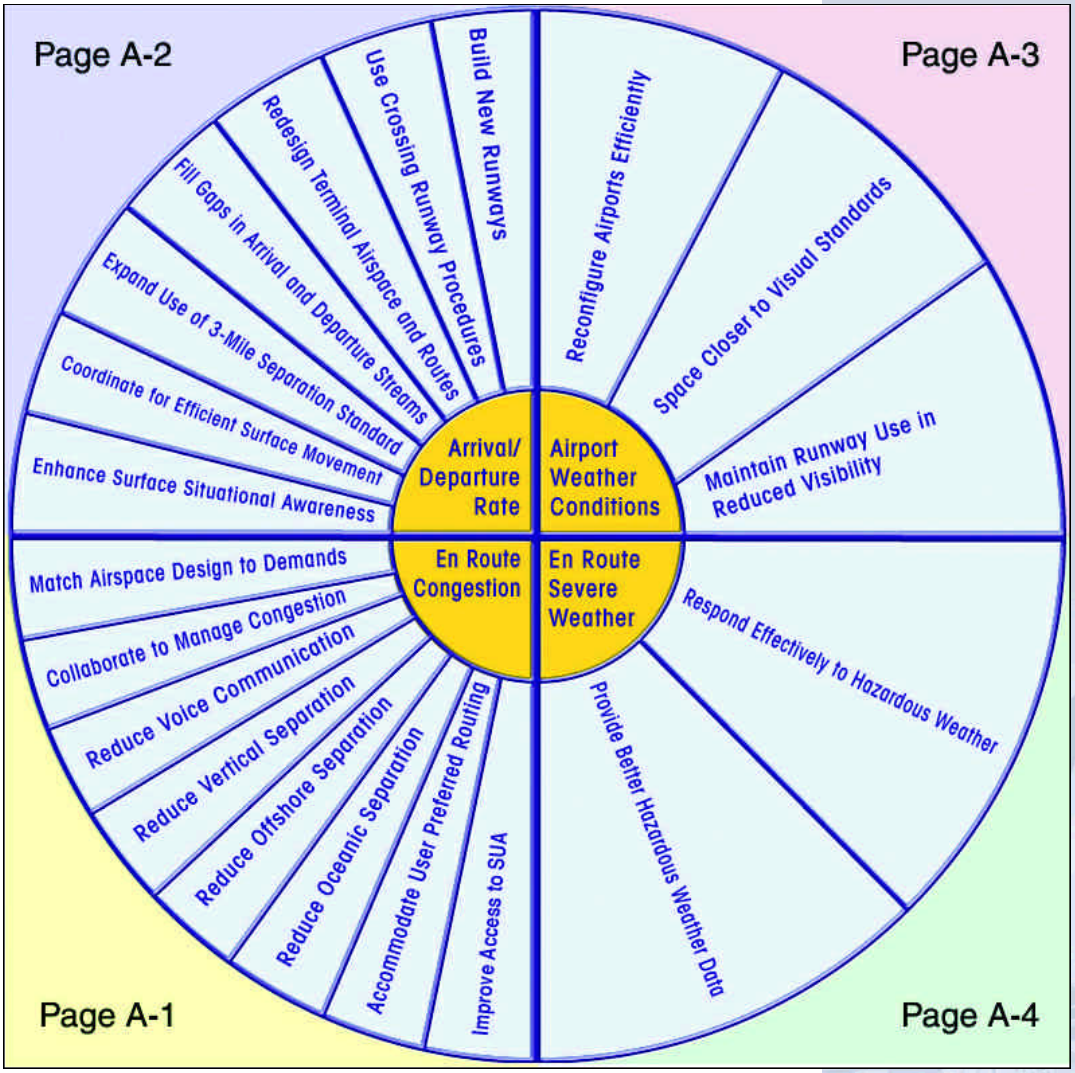


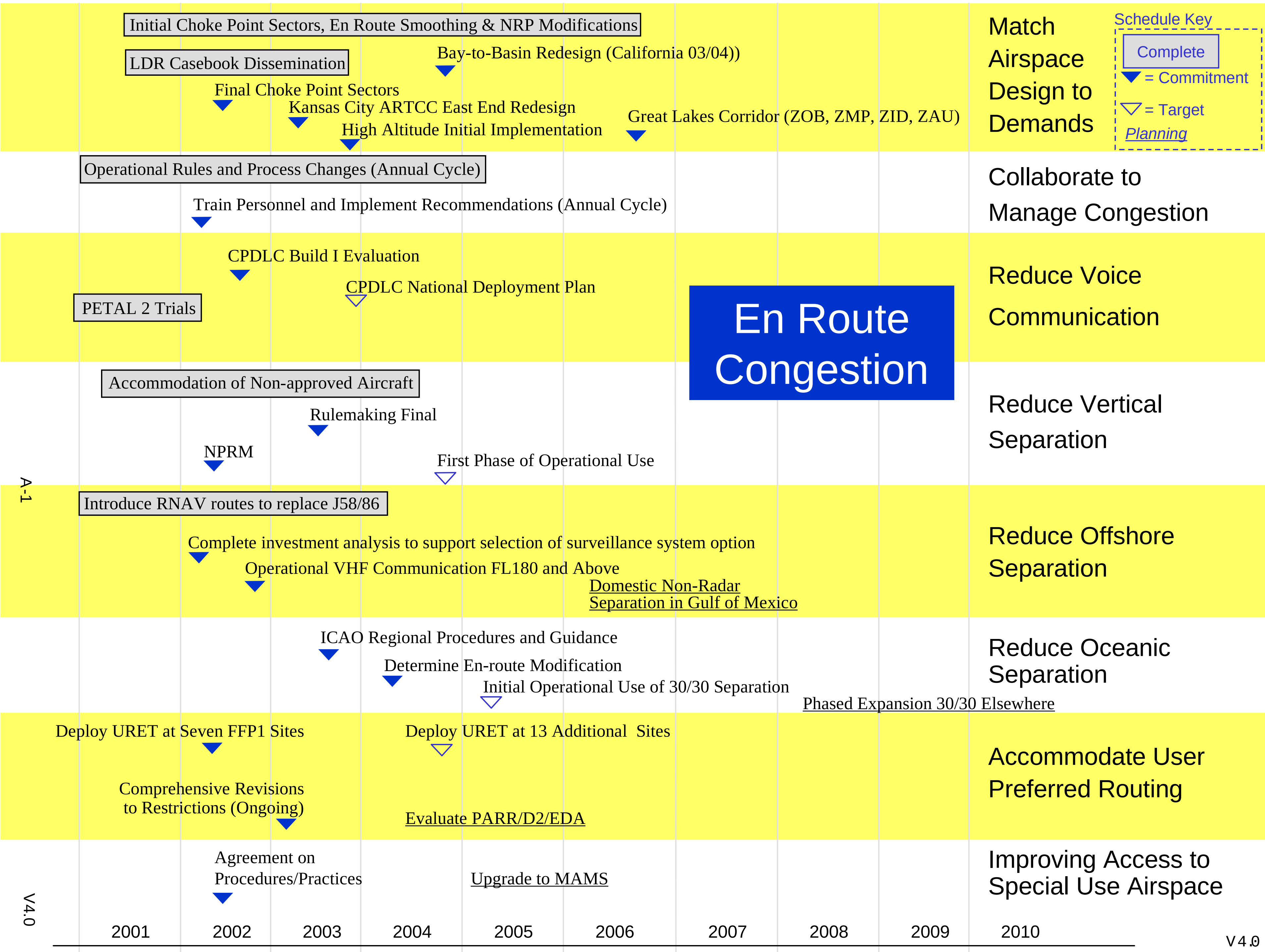
Acronyms (Concluded)

RNAV	Area Navigation
RPM	Revenue Passenger Miles
RTAP	Runway Template Action Plan
RVR	Runway Visual Range
RVSM	Reduced Vertical Separation Minima
SDF	Louisville Kentucky Statson
SEA	Seattle-Tacoma International Airport
SF	San Francisco
SFO	San Francisco International Airport
SMS	Surface management System
SOIA	Simultaneous Offset Instrument Approaches
STL	St. Louis International airport
SUA	Special Use Airspace
TAAP	Tactical Altitude Assignment Program
TMA	Traffic Management Advisor
TRACON	Terminal Radar Approach Control Facility
UPS	United Parcel Service
URET	User Request Evaluation Tool
VNAV	Vertical Navigation
WAAS	Wide Area Augmentation System
ZAU	Chicago ARTCC
ZFW	Ft. Worth ARTCC
ZID	Indianapolis ARTCC
ZLA	Los Angeles ARTCC
ZMA	Miami ARTCC
ZMP	Minneapolis ARTCC
ZOB	Cleveland ARTCC
ZTL	Atlanta ARTCC
ZUA	Oakland ARTCC

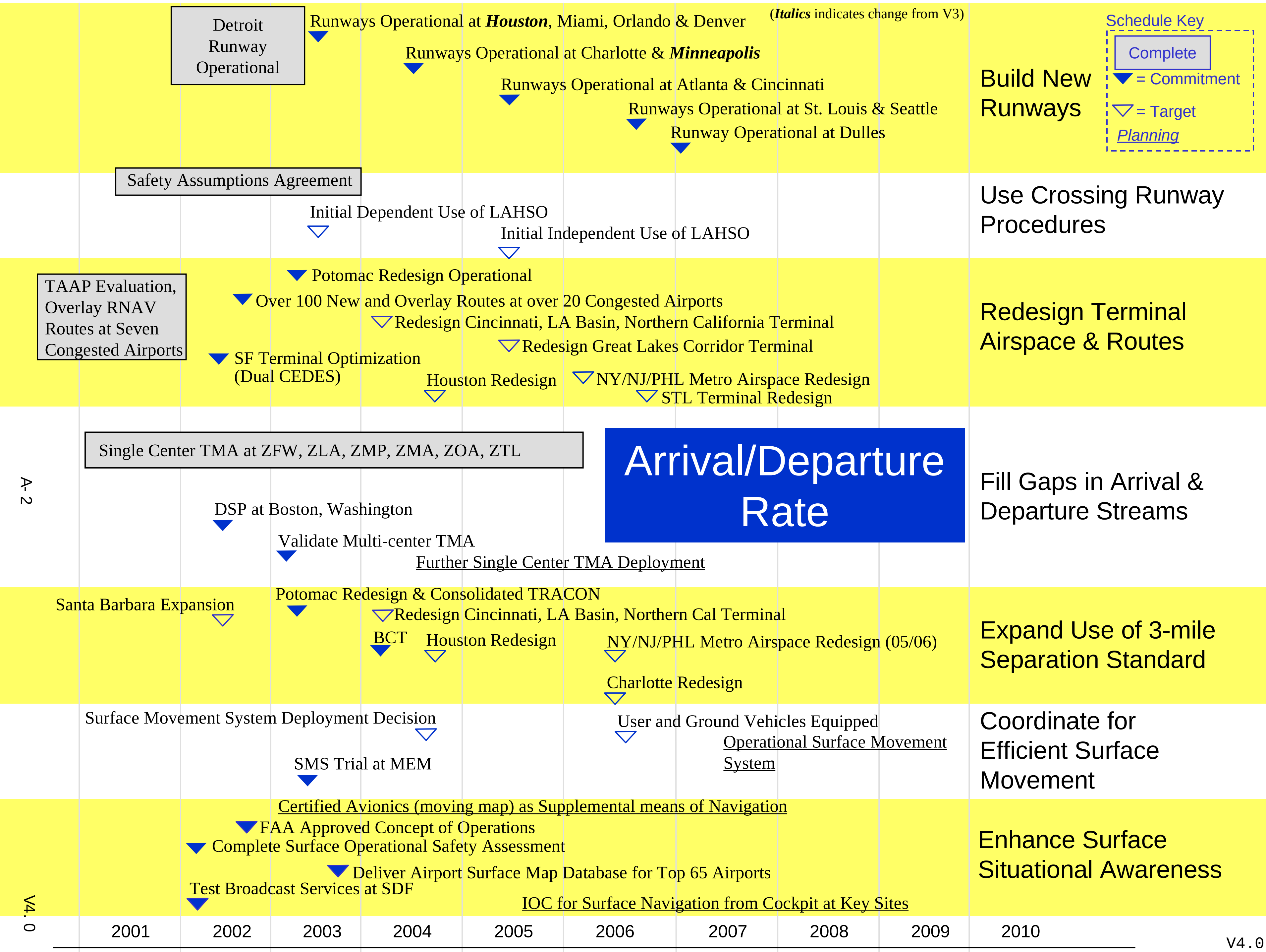
Appendix A

Timelines

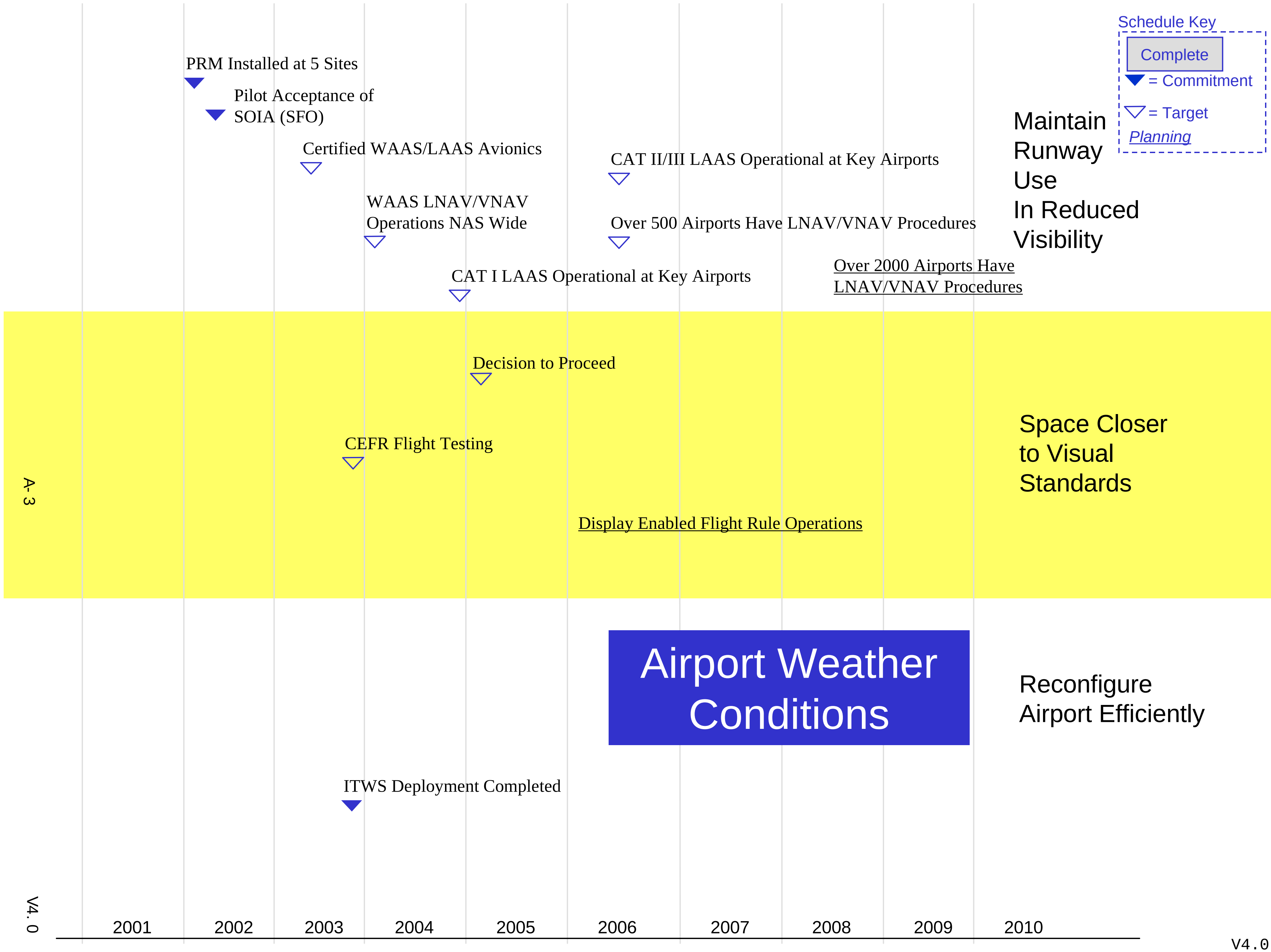


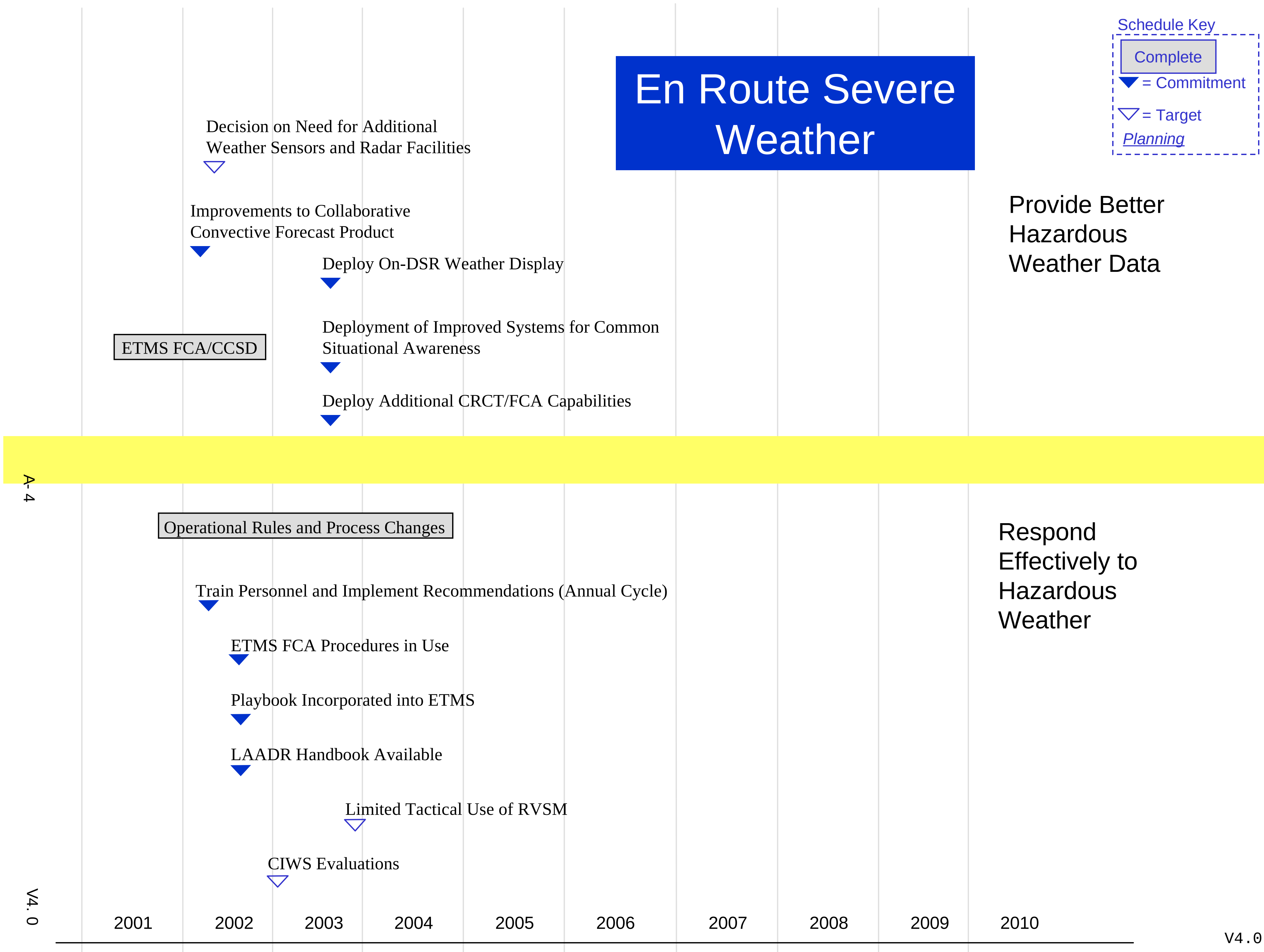


En Route Congestion
Schedule Key
Complete
= Commitment
= Target
Planning
Match Airspace Design to Demands
Initial Choke Point Sectors, En Route Smoothing & NRP Modifications
LDR Casebook Dissemination
Bay-to-Basin Redesign (California 03/04))
Final Choke Point Sectors
Kansas City ARTCC East End Redesign
High Altitude Initial Implementation
Great Lakes Corridor (ZOB, ZMP, ZID, ZAU)
Collaborate to Manage Congestion
Operational Rules and Process Changes (Annual Cycle)
Train Personnel and Implement Recommendations (Annual Cycle)
Reduce Voice Communication
CPDLC Build I Evaluation
CPDLC National Deployment Plan
PETAL 2 Trials
Reduce Vertical Separation
Accommodation of Non-approved Aircraft
Rulemaking Final
NPRM
First Phase of Operational Use
Reduce Offshore Separation
Introduce RNAV routes to replace J58/86
Complete investment analysis to support selection of surveillance system option
Operational VHF Communication FL180 and Above
Domestic Non-Radar Separation in Gulf of Mexico
Reduce Oceanic Separation
ICAO Regional Procedures and Guidance
Determine En-route Modification
Initial Operational Use of 30/30 Separation
Phased Expansion 30/30 Elsewhere
Accommodate User Preferred Routing
Deploy URET at Seven FFP1 Sites
Deploy URET at 13 Additional Sites
Comprehensive Revisions to Restrictions (Ongoing)
Evaluate PARR/D2/EDA
Improving Access to Special Use Airspace
Agreement on Procedures/Practices
Upgrade to MAMS
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
V4.0



(*Italics* indicates change from V3)
Schedule Key
Complete
= Commitment
= Target
Planning
Build New Runways
Detroit Runway Operational
Runways Operational at *Houston*, Miami, Orlando & Denver
Runways Operational at Charlotte & *Minneapolis*
Runways Operational at Atlanta & Cincinnati
Runways Operational at St. Louis & Seattle
Runway Operational at Dulles
Use Crossing Runway Procedures
Safety Assumptions Agreement
Initial Dependent Use of LAHSO
Initial Independent Use of LAHSO
Redesign Terminal Airspace & Routes
TAAP Evaluation, Overlay RNAV Routes at Seven Congested Airports
Potomac Redesign Operational
Over 100 New and Overlay Routes at over 20 Congested Airports
Redesign Cincinnati, LA Basin, Northern California Terminal
Redesign Great Lakes Corridor Terminal
SF Terminal Optimization (Dual CEDES)
Houston Redesign
NY/NJ/PHL Metro Airspace Redesign
STL Terminal Redesign
Arrival/Departure Rate
Fill Gaps in Arrival & Departure Streams
Single Center TMA at ZFW, ZLA, ZMP, ZMA, ZOA, ZTL
DSP at Boston, Washington
Validate Multi-center TMA
Further Single Center TMA Deployment
Expand Use of 3-mile Separation Standard
Santa Barbara Expansion
Potomac Redesign & Consolidated TRACON
Redesign Cincinnati, LA Basin, Northern Cal Terminal
BCT
Houston Redesign
NY/NJ/PHL Metro Airspace Redesign (05/06)
Charlotte Redesign
Coordinate for Efficient Surface Movement
Surface Movement System Deployment Decision
SMS Trial at MEM
User and Ground Vehicles Equipped
Operational Surface Movement System
Enhance Surface Situational Awareness
Certified Avionics (moving map) as Supplemental means of Navigation
FAA Approved Concept of Operations
Complete Surface Operational Safety Assessment
Deliver Airport Surface Map Database for Top 65 Airports
Test Broadcast Services at SDF
IOC for Surface Navigation from Cockpit at Key Sites
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
V4.0


Schedule Key
Complete
= Commitment
= Target
Planning
PRM Installed at 5 Sites
Pilot Acceptance of SOIA (SFO)
Certified WAAS/LAAS Avionics
CAT II/III LAAS Operational at Key Airports
WAAS LNAV/VNAV Operations NAS Wide
Over 500 Airports Have LNAV/VNAV Procedures
CAT I LAAS Operational at Key Airports
Over 2000 Airports Have LNAV/VNAV Procedures
Maintain Runway Use In Reduced Visibility
Decision to Proceed
CEFR Flight Testing
Display Enabled Flight Rule Operations
Space Closer to Visual Standards
Airport Weather Conditions
Reconfigure Airport Efficiently
ITWS Deployment Completed
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010


En Route Severe Weather
Schedule Key
Complete
= Commitment
= Target
Planning
Provide Better Hazardous Weather Data
Decision on Need for Additional Weather Sensors and Radar Facilities
Improvements to Collaborative Convective Forecast Product
Deploy On-DSR Weather Display
ETMS FCA/CCSD
Deployment of Improved Systems for Common Situational Awareness
Deploy Additional CRCT/FCA Capabilities
Respond Effectively to Hazardous Weather
Operational Rules and Process Changes
Train Personnel and Implement Recommendations (Annual Cycle)
ETMS FCA Procedures in Use
Playbook Incorporated into ETMS
LAADR Handbook Available
Limited Tactical Use of RVSM
CIWS Evaluations
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010